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ABSTRACT

How large should a school district be? The answer is similar to President Lincoln's answer to how long a man's legs should be: long enough to reach the ground. A school should be large enough to do the job, to provide the educational programs that meet the needs of its students. School size means different things to different people. A small school in Wyoming would be quite different from a small school in New Jersey. Recommendations for minimum school district sizes range from 400 to 10,000 students; optimum size may vary from less than 750 to 50,000 students. The answer to how large a school district should be is found by analyzing its educational programs and how they are to be delivered. Even if a district is small, alternatives for improving the educational opportunities for students are available. A small school district may reorganize, decentralize, or explore alternative curriculum programs. Cooperative music programs can be developed with other small districts and students shared to form bands or orchestras. Teachers in highly specialized subject areas might alternate between districts. Elementary grades might be combined. Correspondence courses, micro computer instruction, or use of television provide other alternatives. In addition to discussion of alternatives for enriching a curriculum, this monograph identifies some of the problems involved in defining and comparing school district size and reviews some of the research regarding school size. (Author/DS)

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HOW LONG SHOULD A MAN'S LEGS BE?

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FEBRUARY, 1979

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THIS MONOGRAPH IS AN ATTEMPT TO:

1) Identify some of the problems in communicating about school district size,
2) Review some of the research regarding school size.
3) Provide alternatives to consider for enriching a school district curriculum.

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February, 1979

HOW LARGE SHOULD A SCHOOL DISTRICT BE?

The answer to that question is similar to President Lincoln's answer to how long a man's legs should be: long enough to reach the ground.

A school should be large enough to do the job. The answer to district size relates not so much to population, but to factors such as cost, geographic area and curriculum offerings among others.

School size means different things to different people. Tables 1 and 2 report some minimum and optimum school and school district sizes suggested in the past 50 years. Recommendations for minimum school district size range from 400 to 10,000 students, while optimum district size varies from less than 750 to 50,000 students.

The main reason for the wide margin in suggested sizes is different variables are studied in different environments. The optimum school size in Wyoming will differ from New Jersey. Therefore, local conditions apply when discussing school district size.

The resulting confusion on what is small in terms of school district size became evident to me several years ago at a National Association of Secondary School Principals convention. A principal from another state and I were exchanging views on how to enrich 'small' school curriculum.

I told him I was principal of a small 10-12 grade high school of about 150. After a short while, it was clear we were not on the same level. In the conversation he explained that in his district 150 teachers for a high school was not a small school but one of medium size--I quickly spotted another Iowan and used the opportunity to bow out of the discussion--And I never explained I was talking of 150 students in my high school.

Since that encounter years ago, there is still no accepted definition of what is a small school and school district. They are small or large only in relationship to the local environment. This presents unavoidable problems

TABLE 1
SUGGESTED MINIMUM SCHOOL ENROLLMENT

SOURCE	YEAR	ELEMENTARY	HIGH SCHOOL	DISTRICT	BASIS FOR SUGGESTED SIZE
Thornberg	1924		100		Quality of College Work
Dawson*	1934	240	175	50 teachers	Professional Opinion
NEA*	1949	457	677 median size		Survey of Opinion
Oliver	1949		200		Opinion Survey
Gray A.L.*	1950		400		Research-Student Achievement staff qualification, extra curricular activities, curriculum offered(Iowa)
White House Conference* on Education	1956			40 teachers 1,200 pupils	Opinion Survey
Conant *	1959		100 graduates		Curriculum Offerings
Street	1962	300			Study of Student Achievement
Gray S.C.	1961		150		Student Achievement, College enrollment, Faculty Characteristics, Special Services, Extra Curricular participation, Cost, Tuition Cost (Iowa)
Manatt/Netusil	1968			3,000-5,000	School Administration Cost(Midwest)
Whitt*	1968	300-500	450-1,800 10-12	1,500-2,000	Business Management (Midwest)
Hicky	1969			1,500	Review of Literature
Sabulau	1971	250	175	1,000	Gross Expenditure (Illinois)
		125	180	400	Cost Residual (Illinois)
		400	420	1,000	Administrative Cost (Illinois)
Templeton	1972	300	800		Review of Literature
Educational Research Service	1974	175-720	100-1,600	425-10,000	Review of Literature

*- As reported in Summary of Research on Size of Schools and School Districts, 1974

TABLE 2

OPTIMUM OR BEST SCHOOL ENROLLMENT

SOURCE	YEAR	ELEMENTARY	HIGH SCHOOL	DISTRICT	BASIS FOR SUGGESTED SIZE
Dawson*	1934			9,800 - 12,000	Professional Opinion
Oliver	1949		500 - 700		Opinion Survey
Johns & Morphet*	1950			10,000	
Theophilus*	1954	Achievement increase as size increases			Pupil Achievement (Iowa)
Nation Schools	1954	250 - 500 believe best by 85% of survey	150 - 1,200 believe best by 91% of survey		Superintendent Survey
Gray S.C.	1961		400+		Student Achievement, College enrollment, Faculty Character Special Services, Extra Curriculum participation, Cost, Tuition Cost, (Iowa)
Faber	1966			10,000 - 20,000	Review of Literature
Cashen	1970		301 - 500		College Academic Success (Illinois)
Turner/Thrasher	1970		700 - 1,000		Review of Literature
Sabulao	1971	750	500	5,000	Gross Expenditure (Illinois)
		500	500	12,500	Cost residual (Illinois)
		7,500	2,500	8,000	Administrative Cost (Illinois)
Templeton	1972	300 - 800	800 - 1,200		Review of Literature
Education Research Service	1974	350 - 720	293 - 2,000	9,800 - 50,000	Review of Literature
Jess	1977			Less than 750	Student retention, student participation, graduate productivity, citizen satisfaction, parent willingness tofiance school. (Iowa)

* As reported in Summary of Research on Size of Schools and School Districts, 1974

when discussing size of a district. It becomes evident after a brief examination of the literature that what is a large and what is a small district ranges widely.

For example, Jess (1977) identifies small schools as those under 750 students. Similar results came sixteen years earlier to Gray (1961), who classified a high school as small if it had less than 149 students. These two Iowa studies seem to agree that a small school is one which has less than 50 to 60 students in a graduating class.

An earlier study (Hoyt, 1959) classified small schools as ones with 25 or fewer seniors. One of the earliest studies (Thornberg, 1924) identified a small high school as one with less than 50 students.

The Summary of Research on Size of Schools and School Districts (1974), in a section on high schools, sums up the problem best: "in one study a small school enrolls less than 100 pupils and a large school up to 500 pupils; in another an enrollment of 400 establishes a school as small and the large school has 2,500."

CAUTION: When discussing school district size, remember what is small and what is large depends on locale. The size of district should be agreed upon by identifying the number of students in attendance. This should reduce misunderstandings when talking about small or large schools.

DOES RESEARCH HAVE AN ANSWER?

Arguments on what is a large or small school district create problems for researchers examining school district size. Investigators must identify what is small or large for a particular study. Clearly this situation leads to confusion about what is the best size school district. Table 2

One study (Barker and Gump, 1972) reports that student participation in extracurricular activities is greatest in smaller schools. They concluded that high schools of between 61 and 150 students involved the highest proportion of students in music, dramatic, journalistic and student government competitions.

Ian Templeton (1972) reports that a study conducted in Washington state concluded, "that there is no simple relationship between school size and quality, though it is generally agreed that very small schools cannot compete favorably with larger schools." The National Assessment (Henderson, 1973) shows that extreme rural students and inner city students rank lower than the urban and suburban students on national assessment measures.

A very small school or a very large school, again this depends on the local environment, may create an inferior learning environment (Turner and Thrasher, 1970). A study by Cashen (1970) reports that students from high schools of 100 to 500 performed better than those from schools of fewer than 100 or greater than 500 students.

Table 3 is a sample of research showing conflicting results regarding school size.

The 1974 Summary of Research on Size of Schools and Districts provided a comprehensive review of literature. Several concluding remarks are repeated here:

> "School size is not absolute; it is but one of many factors related to educational quality. Good education can and does occur in schools ranging in sizes from small to large.
>
> School district size is not absolute; district size, too, is but one of many factors relating to educational quality and operational efficiency. Good education can and does occur in school districts ranging in sizes from small to large.
>
> Schools and school districts that are small can achieve quality in educational programs but only if sufficient funds are available and are properly spent to compensate for the diseconomies of smallness.

> Schools and school districts can be too large, as well as too small in terms of program quality and efficiency of operation. Some form of decentralization is the most frequently recommended and used method of compensating for the disadvantages of bigness.
>
> The appropriate size of school and school district will vary from locality to locality.
>
> There are numerous practices in educational administration, organization, and instruction that can help alleviate the problems of unsatisfactory school and school district size." (p. 49 & 50)

Another source of information on small school districts is the Clearinghouse on Rural Education and Small Schools (CRESS), New Mexico State University, Las Cruces, New Mexico 88003. Many of their publications can be obtained from the National Educational Laboratory Publishers, Inc., 813 Airport Boulevard, Austin, Texas 78702. These studies of small schools may be useful to those interested in learning more about small schools.

Much of the research suggests that school districts of less than 300 have difficulty in providing a satisfactory educational program. (Cashen, 1970; Rajpal, 1967; Ohio Ed. Association, 1959; Smith, 1961; Gray, 1961). The most cost efficient district sizes seem to be much larger, 5,000 - 10,000 students (Sabulao and Hickrod, 1971 Summary of Research, 1974). Educators, legislatures and citizens need to decide at what size can a local school district operate a quality program most efficiently.

WHAT ARE THE ALTERNATIVES?

The literature confirms our suspicion: there is no concensus on the ideal school district size. In light of this, educators and the public must ask: what do we want from schools within available resources?

How a district adapts itself to its given situation may depend on the number of alternatives open to it. Those alternatives exist both in and out of the school system.

TABLE 3

RESEARCH CONDUCTED IN MIDWEST HIGH SCHOOLS REPORTED IN

Summary of Research on Size of Schools and School Districts

REPORTING NO RECOMMENDATION OR FINDINGS WERE INCLUSIVE

SOURCE	YEAR	VARIABLE STUDIED	FINDINGS	STATE
Hartung	1953	Drop-out rate	No significant differences	Illinois
Anderson, Page, & Smith	1958	Academic Achievement	Size not important	Kansas
Dickerson	1958	Retention rate in College	Appear to have more college drop-outs from smaller schools until adjustment is made for mental ability	Arkansas
Opstad	1958	School Holding Power	No significant difference	Iowa
Hoyt	1959	Achievement in College	No significant difference	Kansas
Ohio Educational Association	1959	Achievement in College	Student from schools of over 250 had better college records	Ohio
Smith	1961	Pupil Achievement	Students from schools of 200+ had higher ACT scores	Arkansas
Barker	1962	Extra class Activities	Favor schools of less than 1500 students	Michigan
Rajpal	1967	Educational Quality and Expenditures	Larger schools had more experienced and better prepared staffs	Iowa
Kiesling	1968	Pupil Achievement	Little evidence to support school size as a factor	Project TALENT
Baird	1969	High School & College Achievement	High school and college achievement related negatively to high school and college size	American College Testing Student
Clement	1969	Pupil staying power in College	May favor smaller schools	Wisconsin
Minn, Public School Survey	1969	Pupil Achievement	Larger schools score higher but other have higher education attainment	Minnesota

If a school district wants a marching band, yet has only 50 high school students, its options may be reorganization with another district, a cooperative music program, or dropping the idea altogether. However, several schools unable to fund individual orchestras may band together to form a single unit. Students might practice alone or in small groups at their school before weekly group sessions.

School districts pondering vocational and technical programs may look at the cooperative route if they have less than 200 students.

Some districts find sharing of administrators, staffs and students to be a palatable means of cost sharing. A teacher in a highly specialized subject area might alternate between school districts. Students from one district might be transported to another district for particular classes. There are other possibilities for the sharing concept.

Correspondence courses in subjects with little laboratory time are viable options. Advanced math and social studies courses are possible, with one teacher assigned to monitor progress of students in correspondence courses.

Schools might take a serious look at new technologies. New (and relatively inexpensive) micro computers and computer terminals can afford some computer assisted instruction. The micro computer avoids costly line hook-ups to computers outside the district. But there are limits to how much instruction the micro computers accomplish.

One of the major news wire services, Associated Press, allows schools to subscribe to the A.P. education wire, a look at very current news in a form teachers and students can use.

Regardless of size, most schools have videotape machines and television sets, and can make use of some instruction via television. Users should keep a close eye on public television stations for programs of interest.

Help in all of these cooperative or alternative ventures may be available to schools in states with intermediate or regional educational service units. Depending on location, these units may be able to provide curriculum specialists, coordinate sharing of equipment and programs, and some direct aid related to computers.

Figure 1 indicates how schools may rotate teachers among several schools to instruct students in concentrated nine-week sessions. Teams of five traveling teachers could meet the academic needs of some 350 students in four schools to take advantage of the nine-week sessions.

At the elementary level, some thought may be given to consolidating grades in non-graded classrooms.

No doubt there are other alternatives to meeting needs of schools. Educators in those schools need to identify what they want schools to accomplish and then plan and organize to get the job done. In some districts, reorganization or decentralization may be the answer, while alternative curriculum programs may fill the bill for others.

Schools should provide educational programs that meet the needs of their students.

Schools that have conducted a needs assessment will be able to use that information to identify their desired programs. Using this information the educational programs can be reported in a format similar to that in Figure 2. Groups suggesting various programs can be identified on the chart. Next, the programs can be listed. And finally, it is reported how the program is delivered.

Some programs may best be provided in the regular school setting. Other programs may best be delivered by using correspondence courses, cooperative programs, etc. Alternatives to delivering the programs should be examined and the best one chosen.

NINE WEEK UNITS

	1 st 9 WEEKS	2 nd 9 WEEKS	3 rd 9 WEEKS	4 th 9 WEEKS
	Math/English	Science/ Social Studies	Business/ Vocational	Independent Study
8:00	General Math Algebra I English III English IV	General Science Biology Chemistry Physics	Industrial Arts I Typing I & II Home Ec III & IV Agriculture III & IV	Writing Metals Spanish I Speech
10:00	Algebra II Advance Math English II	Social Studies I World History U.S. History Government	Home Ec I Industrial Arts II Home Ec II Accounting	Journalism Debate Plastics Spanish II
12:00	********** LUNCH **********			
12:30	Geometry Trig English I Journalism	Economics Contempory Affairs Sociology	Sec. Training Indus. Arts III & IV Agriculture I & II	Spanish III & IV Electricity Correspondence School
2:30	********** COOPERATIVE CO-CURRICULAR PROGRAM **********			
3:30				

FIGURE 1

The answer to how large a school district should be may be found when analyzing the educational programs and how they are to be delivered.

THE EDUCATIONAL PROGRAM NEEDS CHART

Program Identified by:				Identified Program	Program Provided by
Students	Parents	Community	Professional		
				I. What course offering do you want to provide to students?	
				1. State required courses	
				2. Additional Courses	
				a.	
				b.	
				c.	
				II. What extracurricular activities do you want for students?	
				1.	
				2.	
				3.	
				III. What additional educational activities do you want the students to experience?	
				1.	
				2.	
				3.	

FIGURE 2

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Greg, 1961 page 6 should read Gray, 1961.